

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Original) A navigational device for providing a diver access to global positioning system position information, said navigational device comprising:
  - a. a flotation device having sufficient positive buoyancy to support said navigational device above a water surface
  - b. a watertight capsule with transparent window for encasing a gps receiver
  - c. a waterproof signal conducting cable for tethering said flotation device to said watertight capsule such that said cable is adapted to extend generally vertically in a column of water between said flotation device and said watertight capsule.
2. (Previously Amended) A navigational device, as described in claim 1, wherein said flotation device comprises:
  - a. a flotation device of positive buoyancy so as to support said navigational device above said water surface
  - b. a watertight module for housing a radio signal antenna
  - c. said watertight module also housing a power supply
  - d. a platform for supporting said watertight module a distance above said flotation device
  - e. means for attaching said platform to said flotation device
  - f. means for attaching said platform to said watertight module while maintaining the watertight nature of said module
  - g. a ballast located so as to stabilize said navigational device in an upright position while deployed on said water surface
  - h. an enclosure for housing a length of said waterproof signal conducting cable
  - i. said flotation device having an orifice in said cable enclosure whereby lengths of said waterproof cable can be released and retracted through said orifice, and
  - j. a means for connecting said flotation device to one end of said signal cable and said watertight capsule to the distal end of said signal cable.

3. (Original) Said floatation device of claim 2 having a cable-reel for maintaining organization of said waterproof signal cable enclosed in said cable enclosure, said cable-reel comprising:

- a. a spool in which said signal cable is wound and un-wound when said cable is released and retracted from a body of water
- b. said spool having means as to provide self-winding capability
- c. said spool having means as to provide constant and consistent minimal tension on said cable during decent and ascent, as to maintain the least amount of slack between said floatation device and said watertight capsule
- d. said cable-reel of sufficient capacity as to support cable lengths of over 40 meters
- e. means of attaching said cable-reel to said cable enclosure
- f. means of attaching said signal cable to said cable-reel.

4. (Original) A navigational device as described in claim 1, wherein said watertight capsule comprises:

- a. a watertight plastic capsule including a body having one closed end and one open end, and a lid for sealing said open end
- b. an o-ring positioned between said capsule's open end and said lid for forming a watertight seal between said capsule and said lid
- c. a plurality of watertight spring-loaded latches for compressing said o-ring between said capsule and said lid for creating a watertight seal
- d. a watertight cable pass-through for inserting said waterproof cable into said watertight capsule, said cable pass-through having means of insuring the watertight seal of the capsule
- e. a plurality of user interface buttons allowing the diver to interface with said gps receiver while submerged
- f. a magnifying optical lens integrated in a sector of said watertight capsule for enhanced viewing of a gps receiver display.

5. (Original) The navigational device of claim 4, wherein said gps receiver is a global positioning system signal processor for determining where on the surface of the earth the navigational device is located.

6. (Original) A navigational device as described in claim 5, where said gps receiver comprises:

- a. a global positioning system receiver having means to utilize wide area augmentation system, and differential global positioning system data
- b. a means for attaching said antenna to said gps receiver while maintaining signal continuity
- c. an internal renewable power source
- d. a plurality of user interface buttons allowing said diver to input data into the gps receiver
- e. a watertight housing having a display face
- f. said display face having means for visually indicating the current location of said gps receiver
- g. said gps receiver having means for graphically displaying in real-time the geographic position of said gps receiver on the earth's surface
- h. said gps receiver having means for illuminating said display face for enhanced viewing by a diver at night or during low visibility
- i. said gps receiver having means for graphically displaying a plurality of position indicating elements on said display face.

7. (Original) A navigational device, as described in claim 1, wherein said signal conducting cable comprises:

- a. a signal conducting cable in signal conducting relationship with said antenna and said gps receiver
- b. said signal cable being capable of transmitting radio frequency signals
- c. a length of said signal carrying cable
- d. said signal cable having means of electrically carrying the gps signal acquired and transmitted by said antenna
- e. said signal cable having an impedance of approximately 50 ohms

f. said signal cable having a waterproof outer coating  
g. said signal cable having a distal end opposite from said antenna, further comprising said watertight capsule attached to said distal end for transmitting and receiving signals.

8. (Original) A navigational device, as described in claim 2, wherein said watertight module comprises:

- a. a radio signal receiving antenna
- b. an electrical circuit means within said housing, providing a power supply for said active antenna
- c. a power source
- d. said power source comprising a battery operatively connected to a on/off switch for energizing and de-energizing said circuit means
- e. said watertight module having a space of sufficient size to house said antenna
- f. said watertight module having a space of sufficient size to also house said power source
- g. said watertight module having a transparent lid as to allow un-hindered radio signal reception by said gps antenna
- h. said watertight module having means to secure said transparent lid to said case
- i. said watertight module having means as to secure said housing and said lid in a fashion as no water is allowed to enter.

9. (Original) The navigational device of claim 2 wherein said antenna is a receiver responsive to signals generated by global positioning system satellites.

10. (Original) A navigational device, as described in claim 8, wherein said electrical circuit includes:

- a. a means for regulating voltage
- b. a means for blocking said gps signal from said power source
- c. a means for filtering high frequency noise
- d. a means of filtering radio frequency noise
- e. a means for maintaining a consistent approximately 50-ohm impedance path.

11. (cancelled)

12. (Currently Amended) A navigational device for providing global positioning system location information to an underwater diver, said navigational device comprising:

- a. a flotation device having sufficient positive buoyancy to float on a water surface while supporting said navigational device
- b. a watertight capsule with transparent window, for encasing a gps receiver to protect said gps receiver from water and pressure damage
- c. a signal conducting cable for tethering said flotation device to said watertight capsule such that said cable is adapted to extend generally vertically in a column of water between said flotation device and said watertight capsule-
- d. a watertight cable pass-through for connecting said cable to said watertight capsule
- e. a plurality of user interface buttons integrated in a sector of said watertight capsule for allowing the diver to interface with said gps receiver while submerged
- f. a magnifying optical lens integrated in a portion of said watertight capsule for enhanced viewing of said gps receiver display.

13. (Original) A navigational device, as described in claim 12, wherein said flotation device comprises:

- a. a flotation ring of positive buoyancy so as to support said navigational device above said water surface
- b. a watertight module for encasing an antenna
- c. said watertight module also encasing a power supply
- d. a platform for supporting said watertight module a distance above said flotation device
- e. means for attaching said platform to said flotation device
- f. means for attaching said watertight module to said platform while maintaining the watertight nature of said module
- g. a ballast located so as to stabilize said navigational device in an upright position while deployed on a water surface.

h. a means for connecting said floatation device to one end of said signal cable and said watertight capsule to the distal end of said signal cable.

14. (Cancelled)

15. (Currently Amended) The navigational device of claim ~~14~~ 12, wherein said gps receiver is a global positioning system signal processor for determining where on the surface of the earth the navigational device is located.

16. (Original) The navigational device as described in claim 15, where said gps receiver comprises:

- a. a global positioning system receiver having means to utilize wide area augmentation system, and differential global positioning system data
- b. a means for attaching said antenna
- c. an internal rechargeable power source
- d. a plurality of user interface buttons allowing said diver to input data into the gps receiver
- e. a watertight housing having a display face
- f. said display face having means for visually indicating the current location of said gps receiver
- g. a means for graphically displaying on said display face, the geographic movement of said gps receiver
- h. a means for illuminating said display face for enhanced viewing by a diver at night or during low visibility
- i. means for graphically displaying a plurality of position indicating elements on said display face.

17. (Original) A navigational device, as described in claim 12, wherein said signal conducting cable comprises:

- a. a signal carrying cable of some length
- b. said signal conducting cable in signal conducting relationship with said antenna and said gps receiver

- c. said signal cable having means of transmitting radio frequency signals
- d. said signal cable having means of electrically carrying the gps radio signal
- e. said signal cable having an impedance of approximately 50 ohms
- f. said signal cable having a waterproof outer coating
- g. said signal cable having a distal end opposite from said antenna, further comprising said watertight capsule attached to said distal end for housing said gps receiver.

18. (Currently Amended) A a navigational device, as described in claim 13, wherein said watertight module comprises:

- a. a radio signal antenna capable of receiving wide area augmentation system and differential global positioning system signals
- b. a electrical circuit means
- c. a power source
- d. said power source comprising a ~~batter~~ battery operatively connected to said ~~an~~ on/off switch for energizing and de-energizing said circuit means
- e. said watertight module being of sufficient size as to house said power supply and said antenna
- f. said watertight module having a transparent lid as to permit said antenna unhampered access to gps satellite signals
- g. said watertight module having means to secure said transparent lid to said case in a fashion which maintains a watertight seal between said lid and said case.

19. (Original) A navigational device, as described in claim 18, wherein said electrical circuit includes:

- a. a means for regulating voltage
- b. a means for blocking said gps signal from said power source
- c. a means for filtering high frequency noise
- d. a means of filtering radio frequency noise
- e. a means for maintaining a consistent approximately 50-ohm impedance path between said antenna and said gps receiver.

20. (Currently Amended) A navigational device for providing a diver access to global positioning system, position information comprising:

a GPS antenna;

a floatation device for supporting said antenna above the water surface, said floatation device supporting an antenna power supply;

a GPS receiver disposed in a watertight housing; and

a signal conducting cable operatively connecting said GPS receiver to said floatation device.

21. (Cancelled)

22. (Previously Added) A navigational device as defined in Claim 20 further including a cable-reel, connected to said floatation device for dispensing a length of said signal conducting cable.

23. (Currently Amended) A navigational device as defined in Claim ~~21~~ 20, wherein said floatation device includes a watertight module for encasing said antenna and said power supply.

24. (New) A navigational device for providing a diver access to global positioning system, position information comprising:

a GPS antenna;

a floatation device for supporting said antenna above the water surface;

a GPS receiver disposed in a watertight housing;

a signal conducting cable operatively connecting said GPS receiver to said floatation device; and a cable-reel connected to said floatation device for dispensing a length of said signal conducting cable.

25. (New) A navigational device for providing global positioning system location information to an underwater diver, said navigational device comprising:

a) a flotation device having sufficient positive buoyancy to float on a water surface while supporting said navigational device, said flotation device includes;



1) a floatation ring of positive buoyancy for supporting said navigational device above the water surface,

2) a watertight module casing a radio signal antenna and a power supply, said power supply connected to an on/off switch, said watertight module having a transparent lid to permit said antenna access to gps satellite signals, said lid being secured to said case in a watertight manner, said watertight module including an electrical circuit having a means for regulating voltage, a means for blocking said gps signal from said power source, a means for filtering high frequency noise, a means of filtering radio frequency noise, and a means for maintaining a consistent approximately 50-ohm impedance path between said antenna and said gps receiver,

3) a platform for supporting said watertight module a distance above said floatation device

4) means for attaching said platform to said floatation device

5) means for attaching said watertight module to said platform while maintaining the watertight nature of said module,

6) a ballast located so as to stabilize said navigational device in an upright position while deployed on a water surface;

b) a watertight capsule with transparent window for encasing a gps receiver; and

c) a signal conducting cable for tethering said floatation device to said watertight capsule such that said cable is adapted to extend generally vertically in a column of water between said floatation device and said watertight capsule, said floatation device further including means for connecting said floatation device to one end of said signal cable and said watertight capsule to the distal end of said signal cable.